



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

April 30, 2010

Mr. Mark A. Schimmel
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2
NRC INITIAL LICENSE EXAMINATION REPORT 05000282/2010301(DRS);
05000306/2010301(DRS)

Dear Mr. Schimmel:

On March 25, 2010, Nuclear Regulatory Commission (NRC) examiners completed initial operator licensing examination process at your Prairie Island Nuclear Generating Plant. The enclosed report documents the results of the examination. A debrief to discuss preliminary examination observations and findings was held on March 19, 2010, with you and other members of your staff. An exit meeting was conducted by telephone on March 25, 2010, between Mr. J. Sternisha of your staff and Mr. C. Zoia, Chief Examiner, to review the resolution of the station's post examination comments and the proposed final grading of the written examination for the license applicants.

The NRC examiners administered an initial license examination operating test during the week of March 15, 2010. The written examination was administered by Prairie Island Nuclear Generating Plant training department personnel on March 22, 2010. Five Senior Reactor Operator and five Reactor Operator applicants were administered license examinations. The results of the examinations were finalized on April 15, 2010. All applicants passed all sections of their respective examinations and were issued applicable operator licenses.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room, or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

M. Schimmel

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We will gladly discuss any questions you have concerning this examination.

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-282; 50-306
License Nos. DPR-42; DPR-60

Enclosures: 1. Operator Licensing Examination
Report 05000282/2010301 (DRS); 05000306/2010301(DRS)
w/Attachment: Supplemental Information
2. Simulation Facility Report
3. Post Examination Comments w/ NRC Resolution
4. Written Examinations and Answer Keys (SRO)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos. 50-282; 50-306

License Nos. DPR-42; DPR-60

Report No: 05000282/2010301(DRS); 05000306/2010301(DRS)

Licensee: Northern States Power Company, Minnesota

Facility: Prairie Island Nuclear Generating Plant, Units 1 and 2

Location: Welch, MN

Dates: March 15, 2010 through March 25, 2010

Examiners: C. Zoia, Operations Engineer/Chief Examiner
D. McNeil, Senior Operations Engineer
B. Palagi, Senior Operations Engineer

Approved by: Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

Initial License Examination Report ER 05000282/2010301(DRS); 05000306/2010301(DRS); 03/15/2010 - 03/25/2010; Northern States Power Company, Minnesota, Prairie Island Nuclear Generating Plant.

The announced initial operator licensing examination was conducted by regional Nuclear Regulatory Commission examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1.

A. Examination Summary

Ten of ten applicants passed all sections of their respective examinations. Five applicants were issued Senior Operator licenses and five applicants were issued Operator Licenses. (Section 4OA5.1)

B. Licensee-Identified Violation

A violation of very low safety significance was identified by the licensee and was reviewed by the examiners. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking numbers are listed in Section 4OA7 of this report. (Section 4OA7)

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other

.1 Initial Licensing Examinations

a. Examination Scope

The Prairie Island Training Department prepared the examination outline and developed the written examination and operating test. The NRC examiners validated the proposed examination during the week of February 22, 2010, at Prairie Island with the assistance of members of the licensee training staff. During the on-site validation week on February 22, 2010, the examiners audited one license application for accuracy. The NRC examiners conducted the operating portion of the initial license examination during the week of March 15, 2010. Members of the Prairie Island Training Department staff administered the written examination on March 22, 2010. The NRC examiners used the guidance established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, to prepare, validate, revise, administer, and grade the examination.

b. Findings

Written Examination

The NRC examiners determined that the written examination, as originally submitted by the licensee, was within the range of acceptability expected for a proposed examination.

All changes made to the submitted examination were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors, Revision 9, Supplement 1. The licensee's post examination comments on the written examination were documented in Enclosure 3, Post Examination Comments and Resolutions.

Operating Test

The NRC examiners determined that the operating test, as originally submitted by the licensee, was within the range of acceptability expected for a proposed examination. All changes made to the submitted examination were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors, Revision 9, Supplement 1." The licensee had no post examination comments on the operating test.

Examination Results

Ten applicants passed all sections of their examinations resulting in the issuance of five Senior Reactor Operator and five Reactor Operator licenses.

.2 Examination Security

a. Scope

The NRC examiners reviewed and observed the licensee's implementation of examination security requirements during the examination validation and administration to assure compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The examiners used the guidelines provided in NUREG 1021 to determine acceptability of the licensee's examination security activities.

b. Findings

A violation of very low significance (Severity Level IV) was identified by the licensee and was a violation of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy for being dispositioned as an NCV. See Section 4OA7.1 for details.

4OA6 Management Meetings

.1 Debrief

The chief examiner presented the examination team's preliminary observations and findings on March 19, 2010, to Mr. M. Schimmel and other members of the Prairie Island Nuclear Generating Plant Operations Department and Training Department staff.

.2 Exit Meeting

The chief examiner conducted an exit meeting on March 25, 2010, with Mr. J. Sternisha, Prairie Island Nuclear Generating Plant Training Manager by telephone. The NRC's final disposition of the station's post-examination comments was discussed and the revised written examination grading key was provided to Mr. Sternisha during this telephone discussion. The examiners asked the licensee whether any of the material used to develop or administer the examination should be considered proprietary. No proprietary or sensitive information was identified during either the examination, debrief or exit meeting.

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited Violations.

Cornerstone: Mitigating Systems

- Title 10 CFR 55.49, stated, in part, that station personnel shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or

examination. This included activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by this part. Contrary to the above, during the administration of the NRC written exam, a copy of the approved answer key with a photograph of a panel was improperly used to identify which panel lights were lit for one question. This was done in reply to a question asked by an applicant during the exam. Inadvertently, the copy of the photograph of the panel with associated question distractors also included a check mark indicating the correct answer, which immediately compromised the question.

The violation was of very low safety significance because the error was discovered shortly after the copies were distributed to the applicants, the NRC was immediately informed, and the compromised question was deleted from the examination. Additionally, after deleting the compromised question, the NRC determined that because the examination's question distribution still supported a wide and adequate variety of plant knowledge items, the examination was still considered to be a valid examination. Immediate actions taken by the licensee's training department included entering this condition into the corrective action program as AR 1223729. The licensee's training personnel were again briefed concerning examination security requirements and the need to comply with examination security procedures was stressed.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Schimmel, Site Vice President
J. Sternisha, Training Manager
T. Ouret, General Supervisor Operations Training
M. Peterson, Fleet General Supervisor-Simulator / NRC Examinations
J. Sorenson, General Manager Nuclear Training
J. Lash, Operations Manager
M. Smutny, ILT Operations SRO
M. Davis, Regulatory Affairs

NRC

C. Zoia, Chief Examiner
P. Zurawski, Resident Inspector
D. Betancourt, Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agency-Wide Document Access and Management System
DRS	Division of Reactor Safety
NRC	Nuclear Regulatory Commission
ALARA	As Low As Reasonably Achievable
IR	Inspection Report

SIMULATION FACILITY REPORT

Facility Licensee: Prairie Island Nuclear Generating Plant

Facility Docket No: 50-282; 50-306

Operating Tests Administered: March 15 through 19, 2010

The following documents observations made by the NRC examination team during the initial operator license examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
Unexpected Condenser Hotwell Level Alarms	Unexpected condenser hotwell level alarms occurred during Scenario 3, which could neither be explained nor eliminated by the simulator staff. The alarms caused a significant delay for the crew being evaluated. Due to the anticipated alarms and expected delays when this scenario was repeated, the normal evolution for starting the 11 Condensate Pump was eliminated in subsequent scenarios. Simulator Work Order (SWO) B0D-019 was written to address these unexpected alarms.

Post Examination Comments and Resolutions

Question 2:

Given the following conditions:

- Unit 2 is at 30% power and stable.
- Control rod K7 is 15 steps lower than the other rods in control bank D.
- The decision has been made to realign control rod K7 to control bank D per 2C5 AOP5, Misaligned Rod, Stuck Rod, and/or RPI Failure or Drift.

To realign rod K-7, the crew will disconnect the lift coil(s) for:

- a. the affected GROUP (except K7) and adjust the affected GROUP step counter to the misaligned rod position.
- b. the affected BANK (except K7) and determine the average RPI position for all rods in the affected bank.
- c. control rod K7 and determine the average RPI position for all rods in the affected bank.
- d. control rod K7 and adjust both control Bank D step counters to the misaligned rod position.

Answer – b.

Reference: 1C5 AOP5, Section 2.5.4

Applicant Comment:

The word “both” in distractor “d” is a misprint or typographical error.

Facility Comment:

The Station recommended deleting “both” and the “s” off “counters” in distractor “d.”

NRC Resolution:

The NRC agreed with the station response to delete “both” and the “s” off the word “counters” in distractor “d.” It was also noted that “d,” was an incorrect choice for answering this question with or without the recommended changes. No change was made to the answer key as a result of this examination change.

Question 28:

Given the following conditions:

- Unit 1 is at 100% power
- C47017, 11 STM GEN LO-LO LVL Reactor Trip, First out annunciator is LIT.

The required crew response is to . . .

- a. initiate a manual Safety Injection and enter 1E-0.
- b. manually insert control rods if power is greater than 5%.
- c. manually open the FRV to feed 11 S/G back into normal band.
- d. verify S/G levels are below the reactor trip setpoints, THEN manually trip the reactor.

Answer – d.

Reference: FP-OP-COO-01, 1E-0

Applicant Comment:

Distractor “d.” should be asking to verify 11 SG level is below reactor trip setpoint. The way the distractor is worded it makes it sound like you need both SG levels to be low in order to trip the reactor.

Facility Comment:

The station recommends that distractor “d.” wording be changed to “11 S/G level is” vice “S/G levels are” to make the distractor technically accurate.

NRC Response:

The NRC agreed with the facility’s proposed change to distractor “d.” The distractor, as written, appeared to require the operator verify both S/G levels were below reactor trip setpoint, before manually tripping the reactor. The correct action was to trip the reactor with either S/G below the reactor trip setpoints. Since the question referred to 11 S/G in the stem, editing distractor “d.” to read “verify 11 S/G levels...” from “verify S/G levels...” was correct. No change was made to the answer key as a result of this examination change.

Question 35:

Given the following conditions: (A photograph of panel controls for Unit 1 Air Ejectors was provided to the applicants).

- The conditions in the above photograph are seen on the control board.
- A Unit 2 startup is in progress.
- Condenser vacuum is being established.
- Condenser vacuum is 21 in. Hg.

What operator action (if any) is required and why?

- a. No action is required until vacuum reaches 24.5 in. Hg.
- b. No action is required, vacuum is established with the given conditions.
- c. Place Normal Service First Stage Jets in service with the given conditions.
- d. Place Normal Service First Stage Jets in service to finish drawing vacuum.

Answer – d.

Reference: C26, 2C1.2

Facility Comment:

During administration of the examination, an applicant asked for clarification on which lights are lit. The photograph provided did not have sufficient clarity to determine which lights were illuminated and which lights were extinguished. The facility proctor provided the applicants with a revised photograph which included circles around the lights that were lit. It was then discovered that the revised photograph given to students included a check mark next to the correct answer. The facility recommend deleting question because the correct answer was inadvertently disclosed to some of the applicants.

NRC Response:

The NRC agreed with the facility personnel that additional clarification was required to distinguish which controller lights were illuminated and which controller lights were extinguished. The NRC also agreed that the question should be deleted from the examination because the question answer was compromised. Because the number of applicants that saw the question answer could not be determined, the question cannot be deleted for only the applicants that saw the answer; it had to be deleted for all of the applicants. Because a compromise of examination material occurred, the NRC issued a Non-Cited Violation (NCV) in accordance with 10 CFR 55.49, "Integrity of examinations and tests." The answer key was modified to remove question 35 from the answer key.

Question 49:

Given the following conditions:

- Unit 1 is at 100% power.
- 11 Steam Generator tube rupture occurs.
- The Instrument Air header is depressurized.
- 1E-3, Steam Generator Tube Rupture, is in progress.

The RCS cooldown initiate due to the opening of the . . .

- a. Condenser Steam Dump.
- b. Atmospheric Steam Dumps.
- c. Steam Generator PORVs.
- d. Steam Generator Safety Valves.

Answer – c.

Reference: 1E-3

Facility Comment:

The facility recommends that the typographical error “iniate” in the stem of the question be changes to “initiates.”

One applicant contended that the question stem was unclear as to whether the cooldown would be from a manual or automatic action. The applicant contended that the S/G PORVs are fail closed valves per P8174L-001. The applicant further contended that MSIVs also fail closed so distractors “a.” “b.” and “c.” are isolated and will not auto open to begin a plant cooldown. While the S/G PORV has an accumulator, the MSIVs also do and plant OE shows that on a loss of air the MSIVs still fail closed. The only entirely correct answer is “d.” since the loss of air will not affect the safety from opening.

At a minimum the stem should clarify how the cooldown will be initiated, automatically or by operator control. Also refer to logic NF-40322-3 which shows S/G PORV fails closed and NF-40322-1 which shows MSIVs fail closed and NF-40322-2 which show steam dumps fail closed.

NRC Response:

The NRC agreed to add an “s” to “initiate” in order to make the question stem read correctly. The NRC also agreed with the applicant’s contention that the stem did not clearly state whether the cooldown was from manual or automatic action. However, the NRC determined that it did not matter whether the cooldown was conducted manually or allowed to occur automatically. Either manual or automatic action would result in the Steam Generator PORV being the initial source of the cooldown. The Steam Generator PORV would initially automatically open due to its accumulator. The cooldown would then be manually controlled per E-3 Step 7, local operation of the PORV.

The answer key was not modified in response to this typographical error correction, nor in response to the applicant's contention that the stem was unclear.

Question 81:

Given the following conditions:

- Unit 1 is at 50% power following a refueling outage.
- 47012-0601, RCP OIL RESERVOIR HI/LO LVL, is in alarm.
- 11 RCP Upper Thrust Bearing temperature on recorder 1TR-2001 is LIT.
- 11 RCP Upper Thrust Bearing temperature is currently reading 180°F and slowly rising.
- 11 RCP seal injection flow is 6 gpm.
- 11 RCP No. 1 seal leakoff is 1.2 gpm.

What action is required?

- a. Perform an emergency containment entry to add oil to 11 RCP per F2, Radiation Safety.
- b. Initiate a controlled shutdown per 1C1.4, Unit 1 power Operation. When the reactor is shutdown, stop 11 RCP and close the associated spray valve.
- c. Lower Component Cooling system temperature to minimum per 1C14, Component Cooling System – Unit 1.
- d. Trip Unit 1 Reactor and enter 1E-0, Reactor Trip or Safety Injection. When the reactor trip is verified, stop 11 RCP and close associated spray valve.

Answer – b.

Reference: C47012-0601 Annunciator Response

Applicant Comment:

One applicant contended that per ARP 47012 for alarm 47012-0601, the correct response should be to monitor RCP 11 bearing temperatures and vibrations, to contact I&C to determine which reservoir is alarming, and then check conditions locally when conditions permit, and repair if possible. The applicant stated that PINGP has a history of having to add oil to the RCPs at power, to the extent that a modification was installed to allow oil to be added to the upper and lower RCP reservoirs from outside the RCP vaults. The applicant referred to CAP 395684. The applicant stated that an emergency containment entry is defined as "...as an entry which is not controlled by the Radiation Protection Group," and is a "...non-routine entry for inspection or operation such as a fire alarm or limit switch position check. He further asserted that if ARP C47012-0601 was followed, an emergency containment entry would be made to validate the condition while monitoring RCP bearing temperatures and vibrations. The ARP assumes that bearing temperatures remain below 200°F during the entry. Once it is determined that an oil reservoir level is low, oil would be added under a work order, still as an emergency containment entry. The applicant contends that by following this line of reasoning, answer "a." would be correct.

Another applicant contended that distractor "c." was the correct answer. The applicant stated that although there was not a step in ARP 47012-0601 to lower CC temperatures, the first action was to monitor bearing temperatures. Temperatures that were higher than normal would require operators to look at the cooling medium (CC) and evaluate if adjustments were needed. Per procedure 1C14, CC was maintained between 80°F and 105°F. From the above, the applicant believed it would be expected that operators would consider lowering CC temperature per distractor "c.," to control bearing temperature while preparing for the remaining actions of the ARP. The applicant, therefore, contended the remaining actions would consist of the actions found in distractor "a.," to check the oil reservoir status and correction. The applicant maintained that answers "b.," and/or "d." would be correct if bearing conditions continued to degrade.

Facility Follow-up Comment:

The station agreed with the with the first applicant's comment and recommend accepting distractors "a." and "b." as correct answers. The facility disagreed with the second applicant's comment as there is no reference within ARP 47012-0601 to adjust Component Cooling (CC) temperatures. Per procedure 1C14, normal operation of the Component Cooling system maintains system temperature between 80°F-105°F. However, a CC system temperature rise is not occurring in the question and no adjustment is necessary to CC system temperature. The facility recommends accepting answers "a." and "b." based on the above comments.

NRC Response:

The NRC disagreed with the station response recommending both distractors "a." and "b." be considered correct. The argument for considering "a." to be correct assumed that it was necessary to perform an emergency containment entry to add oil to investigate and repair the RCP. The applicant pointed out that adding oil to the RCPs occurred with such regularity that a plant modification was installed to allow oil addition with the plant at power. The NRC determined that such containment entries to add oil were not conducted as emergency containment entries. Because distractor "a." denoted the need to invoke an emergency containment entry, it was an incorrect distractor. Therefore, distractor "a." was considered to be incorrect. The NRC disagreed with the applicant that contended distractor "c." was correct. The NRC agreed with the station response to disallow distractor "c." as a correct answer because ARP 47012-0601 did not reference adjusting CC temperatures and a CC temperature rise was not specified in the stem of the question. The applicant would have needed to assume that CC temperatures were high out of their normal band to see a need to lower CC temperature. Since the question did not reference CC temperatures, the applicant cannot assume the CC temperatures were outside their normal temperature band. NUREG 1021, Appendix E, Part B.7, which was read to the applicants prior to administering the exam states: "When answering a question, do not make assumptions that are not specified in the question..." For the reasons specified above, distractors "a." and "c." are considered incorrect. The answer key was not modified; distractor "b." was retained as the only correct answer.

Question 86:

Given the following conditions:

- Unit 1 is at 100% power.
- Voltage on 4.16KV Safeguards Bus 16 is 3955 volts.

After _____ seconds, D2 Diesel Generator will auto start and load shedding will be initiated on 4.16KV Safeguards Bus 16.

AFTER grid voltage recovers, the Shift Supervisor will direct performance of _____ to respond to this event.

- a. 8
1C20.5, Unit 1 – 4.16KV System
- b. 60
1C20.5, Unit 1 – 4.16KV System
- c. 8
1C20.5 AOP2, Reenergizing 4.16KV Bus 16
- d. 60
1C20.5 AOP2, Reenergizing 4.16KV Bus 16

Answer – b.

Reference: B20.5; 1C20.5, C47024-0304

Facility Comment:

The facility determined that there was no correct answer provided to this question. After post-examination review, it was determined that no section of procedure 1C20.5 results in a transfer of Bus 16 back to CT11 from D2 – the procedure for this transfer is found in 1C20.7. Additionally, 1C20.5 AOP2 is only used if the bus is de-energized. This makes distractors “a.” “b.” “c.” and “d.” incorrect answers. The facility recommended deleting this question from the examination because no correct answer was provided in the distractors.

NRC Response:

The NRC reviewed 1C20.5 and found no section of the procedure that the SRO would direct to return Bus 16 to CT11 from D2. This eliminated distractors “a.” and “b.” as correct answers. Bus 16 was not de-energized as part of the question stem and question conditions. Because 1C20.5 AOP2 was only performed if Bus 16 was de-energized, distractors “c.” and “d.” were also incorrect. Because none of the distractors matched the correct answer (Use of procedure 1C20.7), there was no correct answer provided for this question. The answer key was modified to delete this question from the examination.

WRITTEN EXAMINATIONS AND ANSWER KEYS (SRO)

SRO Initial Examination ADAMS Accession # ML101130329

M. Schimmel

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We will gladly discuss any questions you have concerning this examination.

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

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